

S Poplar River
628.16 Cooperative
M26prus Monitoring
1485 Arrangement ...
2nd qtr. data exchange,
United States
contribution

POPLAR RIVER
COOPERATIVE MONITORING
ARRANGEMENT

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INTRODUCTION

1985 - SECOND QUARTER DATA EXCHANGE POPLAR RIVER BASIN

The Poplar River Bilateral Monitoring Committee was authorized by the Governments of Canada and the United States under the Poplar River Cooperative Monitoring Arrangement dated September 23, 1980. The Committee is composed of representatives of the Governments of the United States, State of Montana, Canada, and Province of Saskatchewan. In addition to the representatives of governments, two ex officio members who are local representative of the State of Montana and Province of Saskatchewan participate in activities of the Committee.

One responsibility of the Committee includes the on-going quarterly exchange of results of water quantity, water quality and air quality monitoring programs. The programs are being conducted in Canada and the United States at or near the International Boundary by cooperative monitoring agencies in accordance with the Technical Monitoring Schedules. Monitoring information is to be transmitted by each Committee co-chairman to his counterpart co-chairman within a reasonable period after the termination of each quarter. In addition, pre selected parties are to receive copies of the quarterly exchange.

This package represents information collected by United States sources for the Poplar River basin during the second quarter of 1985. Included are data for surface water quantity and quality, ground water levels, and air quality. The large amount of air quality data precludes it from being incorporated onto the data report. Hence, it is separate.

STREAMFLOW MONITORING

Responsible Agency: U.S. Geological Survey

Daily mean discharge or levels and instantaneous monthly extremes
as normally published in surface water data publications.

<u>No. on Map</u>	<u>USGS Station No.</u>	<u>Station Name</u>
1	06178000	Poplar River at International Boundary

Responsible Agency: Environment Canada

2	06178500	East Poplar River at International Boundary
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POPLAR RIVER BASIN

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1985 TO DECEMBER 1985
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			60	22	9.2	15						
2			50	22	8.7	16						
3			30	23	8.0	13						
4			15	21	8.1	11						
5			8.0	31	6.9	9.8						
6			4.0	37	5.9	8.4						
7			3.0	28	5.6	6.7						
8			3.0	21	5.0	5.9						
9			7.0	17	4.8	4.4						
10			40	17	5.1	4.2						
11			80	17	5.7	4.2						
12			90	16	5.7	3.4						
13			100	14	6.3	2.7						
14			140	13	7.6	2.2						
15			130	12	7.5	1.7						
16			150	12	7.2	1.4						
17			160	12	7.1	.88						
18			171	11	6.3	.62						
19			166	13	5.2	.49						
20			177	19	4.4	.36						
21			141	18	3.8	.28						
22			100	15	3.4	.25						
23			62	13	3.0	.23						
24			53	14	2.7	.23						
25			46	15	3.4	.22						
26			35	14	3.8	.21						
27			26	13	3.8	.23						
28			20	11	4.4	.20						
29			23	11	4.3	.22						
30			16	10	6.0	.21						
31			22	---	13	---						
TOTAL			2128.0	512	181.9	114.63						
MEAN			68.6	17.1	5.87	3.82						
MAX			177	37	13	16						
MIN			3.0	10	2.7	.20						
AC-FT			4220	1020	361	227						

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

 DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1985 TO DECEMBER 1985
 MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.5	2.4	3.4	3.5	5.1	6.6						
2	2.6	2.3	3.1	3.9	5.1	4.8						
3	2.8	2.2	2.6	3.6	5.1	4.4						
4	2.9	2.2	2.4	3.4	5.1	3.9						
5	2.8	2.0	2.3	3.4	5.1	3.5						
6	2.9	2.0	2.4	3.4	5.1	3.5						
7	2.9	2.0	2.5	3.4	5.1	3.2						
8	2.7	1.9	2.6	3.2	5.3	3.8						
9	2.8	1.9	2.8	3.1	5.0	3.3						
10	2.7	1.9	2.9	3.1	7.8	3.3						
11	2.4	1.9	3.0	3.1	10	3.3						
12	2.7	1.8	3.0	3.2	12	3.0						
13	2.8	2.0	3.2	3.1	13	3.1						
14	2.9	2.1	3.3	3.1	9.0	3.1						
15	2.9	2.3	3.2	3.1	9.1	2.9						
16	2.9	2.4	3.2	2.8	8.4	3.3						
17	3.0	2.4	3.4	3.1	8.3	3.4						
18	2.9	2.3	3.6	3.1	8.4	2.9						
19	2.8	2.4	3.4	3.4	8.2	2.7						
20	2.7	2.5	3.3	4.3	8.0	2.8						
21	2.7	2.6	3.3	3.7	8.3	2.8						
22	2.7	2.7	3.1	3.3	8.2	2.6						
23	2.8	2.7	3.1	3.1	8.2	2.6						
24	2.9	4.0	3.3	3.8	8.4	2.7						
25	2.9	6.7	3.4	4.6	11	2.8						
26	2.9	3.8	3.1	5.1	8.9	2.6						
27	2.9	2.9	2.8	5.4	9.0	2.6						
28	2.9	3.2	3.0	5.2	9.2	2.7						
29	2.7	---	2.9	5.2	8.6	2.7						
30	2.6	---	2.9	5.0	12	2.7						
31	2.5	---	3.1	---	11	---						
TOTAL	86.1	71.5	93.6	110.7	251.0	97.6						
MEAN	2.78	2.55	3.02	3.69	8.10	3.25						
MAX	3.0	6.7	3.6	5.4	13	6.6						
MIN	2.4	1.8	2.3	2.8	5.0	2.6						
AC-FT	171	142	186	220	498	194						

SURFACE WATER QUALITY MONITORING

Station Location

Responsible Agency: U.S. Geological Survey

No. on Map	USCS Station No.	Station Name
1	06178000	Poplar River at International Boundary
2	06178500	East Poplar River at International Boundary
3	06179000	East Poplar River near Scobey

PARAMETERS

WATSTORE*

Sampling Frequency

Code	Parameter	Analytical method	No.	1	2	3
00410	Alkalinity-field	Elect. Titration	M	M	M	
90410	Alkalinity-lab	Elect. Titration	M	M	M	
01106	Aluminum-diss	AA	SA	SA	SA	
00610	Ammonia-tot	Colorimetric	M	M	M	
00625	Ammonia+Org N-tot	Colorimetric	M	M	M	
01000	Arsenic-diss	AA, hydride	SA	SA	SA	
01002	Arsenic-tot	AA, hydride	A	A	A	
01010	Beryllium-diss	AA	SA	SA	SA	
01012	Beryllium-tot/rec	AA-persulfate	A	A	A	
01020	Boron-diss	Colorimetric	M	M	M	
01025	Cadmium-diss	AA	SA	SA	SA	
01027	Cadmium-tot/rec	AA-persulfate	A	A	A	
00915	Calcium	AA	M	M	M	
00680	Carbon-tot Org	Wet Oxidation	SA	SA	SA	
00940	Chloride-diss	Ion chromatography	M	M	M	
01030	Chromium-diss	AA	SA	SA	SA	
01034	Chromium-tot/rec	AA-persulfate	A	A	A	
00080	Color	Electrometric, visual	M	M	M	
00095	Conductivity	Wheatstone Bridge	M	D	M	
01040	Copper-diss	AA	SA	SA	SA	
01042	Copper-tot/rec	AA-persulfate	A	A	A	
00061	Discharge-inst	Direct measur.	M	M	M	
00950	Fluoride	Electrometric	M	M	M	
01046	Iron-diss	AA	M	M	M	
01045	Iron-tot/rec	AA-persulfate	A	A	A	
01049	Lead-diss	AA	SA	SA	SA	
01051	Lead-tot/rec	AA-persulfate	A	A	A	
00925	Magnesium-diss	AA	M	M	M	
01056	Manganese-diss	AA	SA	SA	SA	
01055	Manganese-tot/rec	AA-persulfate	A	A	A	
01065	Nickel-diss	AA	SA	SA	SA	
01067	Nickel tot/rec	AA-persulfate	A	A	A	
00615	Nitrite-tot	Ion-chromatography	M	M	M	
00630	Nitrate+Nitrite-tot	Colorimetric	M	M	M	
00300	Oxygen-diss	Winkler/meter	M	M	M	
70507	Phos, Ortho-tot	Colorimetric	M	M	M	
00400	pH	Electrometric	M	M	M	
00665	Phosphorous-tot	Colorimetric	M	M	M	
00935	Potassium-diss	AA	M	M	M	
00931	SAR	Calculated	M	M	M	
80154	Sediment-conc.	Filtration-gravimetric	M	M	M	
80155	Sediment-load	Calculated	M	M	M	
01145	Selenium-diss	AA, hydride	SA	SA	SA	
01147	Selenium tot/rec	AA, hydride	A	A	A	
00955	Silice	Colorimetric	M	M	M	
00930	Sodium	AA	M	M	M	
00945	Sulfate-diss	Colorimetric	M	M	M	
70301	Total Dissolved Solids	Calculated	M	M	M	
00010	Temp Water	Toluene	M	M	M	
00020	Temp Air	Toluene	M	M	M	
00076	Turbidity	Nephelometric	M	M	M	
80020	Uranium-diss	Fluorimetric	-	MC	-	
01090	Zinc-diss	AA	SA	SA	SA	
01092	Zinc-tot/rec	AA-persulfate	A	A	A	

*Computer storage and retrieval system - USCS

Symbols: C-continuous; D-daily; M-monthly; MC-monthly composite; A-annually at high flow; SA-semi-annually at low and high flow; AA-atomic absorption; tot-total; rec-recoverable; diss-dissolved



POPLAR RIVER BASIN

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	TIME	TEMPER- ATURE (DEG C) (00010)	TEMPER- ATURE, AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CLOUD COVER (PER- CENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TUR- BID- ITY (NTU) (00076)
MAR , 1985									
20...	1700	4.0	13.5	693	0	E.0	.00	241	13
APR									
09...	1510	10.5	20.0	695	0	E.0	.00	18	--
MAY									
15...	1100	14.0	15.0	701	0	E4.0	.00	7.5	2.5
JUN									
11...	1615	16.5	16.5	705	70	E7.0	1	4.1	3.3

DATE	COLOR (PLAT- INUM- COBALT UNITS) (00080)	SPE- CIFIC CON- DUCT- ANCE (UMHOS) (00095)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	PH (STAND- ARD UNITS) (00400)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
MAR , 1985									
20...	70	336	6.6	55	7.8	3.9	1.9	1.6	.100
APR									
09...	--	689	10.4	103	8.0	4.3	--	1.3	.020
MAY									
15...	30	1,240	8.6	91	8.4	3.0	--	.75	.050
JUN									
11...	45	1,320	13.6	151	8.6	2.4	--	.93	.070

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR , 1985									
20...	.020	.18	1.7	.20	.200	16	0	23	15
APR									
09...	<.010	--	1.3	<.10	.050	--	9	43	30
MAY									
15...	<.010	--	.80	<.10	.030	--	0	42	49
JUN									
11...	<.010	--	1.0	<.10	.020	--	0	27	53

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
MAR , 1985									
20...	29	1	33	8.9	2.6	40	.20	9.3	2
APR									
09...	66	2	37	7.6	3.6	96	.30	10	--
MAY									
15...	170	4	54	7.1	6.2	200	.40	6.8	--
JUN									
11...	210	5	61	7.9	5.8	230	.40	.6	--

POPLAR RIVER BASIN

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
MAR , 1985									
20...	2	<.5	10	200	1	<1	<10	20	3
APR									
09...	--	--	--	390	--	--	--	--	--
MAY									
15...	--	--	--	960	--	--	--	--	--
JUN									
11...	--	--	--	1,200	--	--	--	--	--

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)
MAR , 1985									
20...	7	710	150	<1	<1	70	37	3	5
APR									
09...	--	--	76	--	--	--	--	--	--
MAY									
15...	--	--	44	--	--	--	--	--	--
JUN									
11...	--	--	30	--	--	--	--	--	--

DATE	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAR , 1985									
20...	13	<10	90	<1	<1	210	134	.28	99
APR									
09...	--	--	--	--	--	390	19	.53	--
MAY									
15...	--	--	--	--	--	720	15	.97	--
JUN									
11...	--	--	--	--	--	840	9.3	1.1	--

DATE	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS- PHORUS TOTAL (MG/L AS PO4) (71886)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (95902)
MAR , 1985							
20...	.090	--	8.4	47	31	136	0
APR							
09...	.010	--	--	--	--	261	9
MAY							
15...	<.010	--	--	--	--	419	0
JUN							
11...	.020	.06	--	--	--	499	0

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	TIME	TEMPER- ATURE (DEG C) (00010)	TEMPER- ATURE, AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CLOUD COVER (PER- CENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TUR- BID- ITY (NTU) (00076)
JAN , 1985									
15...	1000	.0	-10.0	692	75	E.0	1	2.8	--
FEB									
13...	1230	.0	-7.0	706	U	E10	.00	3.0	1.2
MAR									
14...	1130	.0	1.0	700	0	E8.0	.00	2.9	3.0
APR									
17...	0900	10.0	15.0	690	0	E.0	.00	3.2	6.5
MAY									
14...	1445	13.0	18.0	696	0	E.0	.00	9.2	5.5

DATE	COLOR (PLAT- INUM- GOBALT UNITS (00080)	SPE- CIFIC CON- DUCT- ANCE (UMHOS) (00095)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	PH (STAND- ARD UNITS) (00400)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
JAN , 1985									
15...	--	1,470	5.4	41	7.7	22	--	.36	.840
FEB									
13...	5	1,500	5.4	40	7.5	40	1.5	.20	1.20
MAR									
14...	35	1,290	9.6	72	7.8	16	1.1	.42	.587
APR									
17...	20	1,500	8.2	81	8.1	9.0	--	--	.041
MAY									
14...	25	1,280	9.1	95	8.3	3.8	--	1.5	.122

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	HARD- NESS (MG/L AS CaCO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS Ca) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)
JAN , 1985									
15...	<.010	1.2	<.10	.020	--	390	79	47	190
FEB									
13...	<.010	1.4	.10	<.010	--	410	87	46	170
MAR									
14...	<.010	1.0	.10	.010	--	350	68	43	170
APR									
17...	<.010	.80	<.10	.040	--	--	70	52	210
MAY									
14...	.020	1.6	<.10	.040	--	310	48	46	180

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	SODIUM AD- SORP- TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
JAN , 1985									
15...	4	51	7.0	6.2	280	.30	15	--	--
FEB									
13...	4	47	7.4	5.8	270	.30	14	--	--
MAR									
14...	4	51	7.4	5.7	260	.30	13	--	--
APR									
17...	--	--	7.9	6.4	290	.30	8.7	--	--
MAY									
14...	5	55	13	6.3	240	.30	4.5	--	--

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
JAN , 1985									
15...	--	--	1,800	--	--	--	--	--	--
FEB									
13...	--	--	1,700	--	--	--	--	--	--
MAR									
14...	--	--	1,500	--	--	--	--	--	--
APR									
17...	--	--	1,800	--	--	--	--	--	--
MAY									
14...	--	--	1,500	--	--	--	--	--	--

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
JAN , 1985									
15...	--	28	--	--	--	--	--	--	--
FEB									
13...	--	17	--	--	--	--	--	--	--
MAR									
14...	--	34	--	--	--	--	--	--	--
APR									
17...	--	13	--	--	--	--	--	--	--
MAY									
14...	--	22	--	--	--	--	--	--	--

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	ZINC, TOTAL, RECOV- ERABLE (UG/L AS ZN) (01092)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)
JAN , 1985									
15...	--	--	--	--	970	7.3	1.3	69	<.010
FEB									
13...	--	--	--	--	990	8.0	1.3	61	<.010
MAR									
14...	--	--	--	--	880	6.9	1.2	69	<.010
APR									
17...	--	--	--	--	--	--	--	--	.010
MAY									
14...	--	--	--	--	780	19	1.1	--	<.010

DATE	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	ALKA- LINIT LAB (MG/L AS CACO3) (90410)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (95902)
JAN , 1985					
15...	--	18	.14	547	0
FEB					
13...	6.6	19	.15	495	0
MAR					
14...	4.9	59	.46	467	0
APR					
17...	--	--	--	383	--
MAY					
14...	--	--	--	455	0

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

SPECIFIC CONDUCTANCE (MICROMHO CM AT 25 DEG C), CALENDAR YEAR JANUARY 1985 TO DECEMBER 1985
ONCE-DAILY

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1320	1470	1350	1360	1390	1390	1400					
2	1370	1480	1180	1230	1380	1420	1410					
3	1340	1470	1270	1160	1400	1410	1420					
4	1350	1450	1380	1210	1400	1440	1430					
5	1270	1450	1430	1310	1380	1470	1440					
6	1350	1440	1400	1360	1380	1470	1440					
7	1340	1440	1400	1380	1340	1460	1430					
8	1330	1440	1330	1380	1320	1470	1450					
9	1390	1430	1310	1370	1340	1480	1450					
10	1390	1420	1290	1360	1360	1420	1440					
11	1380	1430	1360	1360	1340	1400	1430					
12	1430	1440	1340	1400	1310	1400	1420					
13	1390	1440	1320	1420	1270	1350	1430					
14	1370	1440	1300	1440	1280	1360	1420					
15	1390	1440	1290	1420	1280	1390	1410					
16	1360	1420	1290	1430	1280	1390	1410					
17	1370	1410	1270	1440	1280	1410	1410					
18	1370	1460	1170	1440	1270	1400	1410					
19	1580	1440	1170	1440	1280	1390	1410					
20	1520	1430	1160	1490	1280	1360	1400					
21	1540	1430	1140	1560	1270	1350	1410					
22	1480	1430	1110	1620	1270	1410	1400					
23	1440	1370	1210	1630	1260	1400	1400					
24	1440	1400	1380	1600	1270	1410	1410					
25	1410	770	1390	1580	1260	1390	1390					
26	1420	805	1310	1560	1320	1390	1390					
27	1440	1310	1260	1560	1360	1390	1380					
28	1430	1440	1280	1480	1290	1390	1390					
29	1430	---	1340	1430	1300	1400	1390					
30	1470	---	1400	1430	1280	1420	1400					
31	1560	---	1420	---	1360	---	1420					
MEAN	1410	1390	1300	1430	1320	1410	1410					
CAL YR	MEAN	1380	MAX	1640	MIN	982						

POPLAR RIVER BASIN

06179000 EAST FORK POPLAR RIVER NEAR SCOBEEY, MT.

WATER QUALITY DATA

DATE	TIME	TEMPER- ATURE (DEG C) (00010)	TEMPER- ATURE, AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CLOUD COVER (PER- CENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TUR- BID- ITY (NTU) (00076)
JAN, 1985									
15...	1230	.0	.0	694	100	E.0	3	E.50	--
MAR									
14...	0915	.0	.0	703	0	E.0	.00	6.3	6.2
APR									
17...	1045	9.5	19.0	691	0	E.0	.00	6.5	3.4
MAY									
14...	1630	16.0	22.0	698	0	E.0	.00	12	5.4
JUN									
12...	1515	16.0	21.0	700	50	E12	1	2.7	5.0

DATE	COLOR (PLAT- INUM- COBALT UNITS) (00080)	SPE- CIFIC CON- DUCT- ANCE (UMHOS) (00095)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	PH (STAND- ARD UNITS) (00400)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
JAN, 1985									
15...	--	3,100	1.0	8	7.8	28	--	.68	.520
MAR									
14...	60	852	6.7	50	7.7	13	1.3	.90	.100
APR									
17...	25	872	10.2	99	8.1	5.1	--	.81	.290
MAY									
14...	40	1,620	9.0	100	8.5	2.7	--	1.2	.070
JUN									
12...	30	740	10.6	117	8.9	1.0	--	.93	.070

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
JAN, 1985									
15...	<.010	--	1.2	<.10	.030	--	780	130	110
MAR									
14...	.030	.27	1.0	.30	.050	--	240	47	29
APR									
17...	<.010	--	1.1	<.10	.030	6.6	210	36	29
MAY									
14...	<.010	--	1.3	<.10	.080	--	340	43	57
JUN									
12...	<.010	--	1.0	<.10	.020	--	280	25	52

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
JAN, 1985									
15...	460	7	56	16	14	580	.40	24	--
MAR									
14...	110	3	49	8.3	4.8	160	.20	11	--
APR									
17...	120	4	55	5.6	4.5	160	.20	4.0	<1
MAY									
14...	260	6	62	9.0	8.8	350	.30	8.2	--
JUN									
12...	230	6	63	11	6.8	290	.30	.9	--

POPLAR RIVER BASIN

06179000 EAST FORK POPLAR RIVER NEAR SCOBEE, MT.--Continued

WATER QUALITY DATA

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
JAN , 1985									
15...	--	--	--	3,600	--	--	--	--	--
MAR									
14...	--	--	--	850	--	--	--	--	--
APR									
17...	2	<.5	<10	810	<1	<1	10	40	1
MAY									
14...	--	--	--	2,000	--	--	--	--	--
JUN									
12...	--	--	--	1,600	--	--	--	--	--

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)
JAN , 1985									
15...	--	--	70	--	--	--	--	--	--
MAR									
14...	--	--	100	--	--	--	--	--	--
APR									
17...	7	360	51	<1	<1	40	19	3	1
MAY									
14...	--	--	21	--	--	--	--	--	--
JUN									
12...	--	--	37	--	--	--	--	--	--

DATE	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN , 1985									
15...	--	--	--	--	--	--	--	2.6	54
MAR									
14...	--	--	--	--	--	.00	9.8	.78	--
APR									
17...	4	<10	10	<1	<1	--	9.8	.76	--
MAY									
14...	--	--	--	--	--	.00	32	1.4	--
JUN									
12...	--	--	--	--	--	--	6.4	1.2	--

DATE	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS- PHORUS TOTAL (MG/L AS PO4) (71886)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	ALKA- LITY LAB (MG/L AS CACO3) (90410)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (95902)
JAN , 1985						
15...	.010	--	--	84	689	0
MAR						
14...	.020	--	5.8	--	318	0
APR						
17...	.010	--	--	--	280	0
MAY						
14...	<.010	--	--	--	534	0
JUN						
12...	<.010	.06	--	--	447	0

GROUND WATER LEVELS TO MONITOR

POTENTIAL DRAWDOWN DUE TO

COAL SEAM DEWATERING

Responsible Agency: Montana Bureau of Mines and Geology

No. on Map

2 to 22

Sampling

Determine water levels
quarterly



GROUND WATER PIEZOMETERS TO MONITOR POTENTIAL

DRAWDOWN DUE TO COAL SLAM DEWATERING

Ground-water level measurements

Well no.	Depth to water (feet)	
	March 14, 1985	May 25, 1985
2	217.99	not measured
3	81.75	81.72
4	60.80	60.74
5	21.02	20.83
6	21.53	21.30
7	78.96	77.75
8	13.48	14.03
9	14.07	14.51
10	6.22	5.95
11	---	-0.85
12	dry	dry
13	134.99	135.73
14	211.87	212.48
15	224.56	229.07
16	31.59	31.75
17	247.78	247.93
18	215.28	214.47
19	126.11	126.23
20	dry	0
21	---	242.23
22	18.86	18.49

AMBIENT AIR QUALITY MONITORING

Responsible Agency: State of Montana
Air Quality Bureau

<u>No. on Map</u>	<u>Location</u>	<u>Parameters</u>	<u>Sampling Frequency and Reporting</u>
1	International Boundary	Sulfur dioxide Suspended particulates Fine particulates Sulfation rate	Hourly averages 24-hour averages 24-hour averages Monthly averages
2	Hanrahan	Sulfur dioxide Suspended particulates Fine particulates Wind speed Wind direction Temperature Sulfation rate	Hourly averages 24-hour averages 24-hour averages Hourly averages Hourly averages Hourly averages Monthly
3	Ft. Peck Reservation	Sulfur dioxide Suspended particulates	Hourly averages 24-hour averages
4	Scobey - Richardson	Suspended particulates Sulfation rate	24-hour averages Monthly averages
5	Microwave Tower	Sulfation rate	Monthly averages
6	Flaxville	Sulfation rate	Monthly averages
7	TV Tower Hill	Sulfation rate	Monthly averages
8	Scobey-Downtown	Sulfation rate	Monthly averages
9	Four Buttes	Sulfation rate	Monthly averages

METHODS

Sulfur Dioxide	EPA Equivalent Method EQSA-0276-009
Total Suspended	EPA Reference Method CFR Title 40 Part 50, Appendix B (State of Montana QA Manual Section 1.1.10 and 1.2.10) 24-hour sample once/6 days
Sulfation Rate	<u>Methods of Air Sampling and Analysis, 2nd Edition,</u> "Tentative Method of Analysis of the Sulfation Rate of the Atmosphere (Lead Dioxide Plate Method - Turbidimetric Analysis), p. 691.



AMBIENT AIR QUALITY MONITORING

AIR QUALITY DATA

The large amount of air quality data precludes it from being incorporated into the data report; hence it is sent separately to Mr. Howard.

